

ment of the head and body towards the side injured was produced. The gait of the bird was uncertain; it went from one side to the other; sometimes the feet would be placed one before the other, and the bird fall in consequence; on trying to peck it would fall forwards. The pigeons were quite unable to fly; if thrown into the air they fell heavily to the ground. These experiments exactly corroborate those obtained by Dr. M'Kendrick, of whose observations Dr. Kohts seems to be unaware. A very similar result was obtained on a dog; the left posterior tubercle was destroyed, and well-marked ataxy was produced, with inclination to fall to the left. Lastly, in Dr. Ferrier's recently published work, an account is given of a similar experiment on a monkey. Destruction of the nates caused, besides loss of sight, very marked disturbance of equilibrium. The animal sat in a crouching posture, swaying backwards and forwards, and, on trying to move, turned round, and showed a tendency to fall backwards. Electrical stimulation of the corpora quadrigemina threw no light on their co-ordinating function. It produced general tonic spasms, opisthotonos, and evidence of pain.

These experiments constitute good ground for the conclusion that the cerebellum cannot be regarded as the exclusive centre of co-ordination, and that the corpora quadrigemina must be associated with it. It is not easy to explain these results by the connection between the corpora quadrigemina and the cerebellum. But Meynert has given reasons for regarding the optic thalami and the corpora quadrigemina as reflex centres, and Nothnagel's experiments on guinea-pigs support this view. He found that voluntary movements remain after destruction of the optic thalami, but the limbs remain in whatever position they are placed. The functions of the optic thalami and of the corpora quadrigemina would thus seem, in more than one aspect, to be closely related, and their mutual relation and action affords a promising field for future observation.—*Lancet*, Jan. 6, 1877.

2. *The Development of the True Corpus Luteum*.—In the last two numbers of a series of papers on the migration of the human ovum and the development of the corpus luteum, Professor MAYRHOFFER, of Vienna, contends that the true corpus luteum of pregnancy, like the so-called false corpus luteum of menstruation, disappears and is replaced by another at short intervals, and that the doctrine hitherto accepted, that it has a duration of from nine to twelve months, is false. In support of this view he quotes a series of cases in which death followed the rupture of a tubal foetation of from seven to twelve weeks' duration, and in which the corpus luteum is described as communicating with the peritoneal cavity by an aperture not yet cicatrized. These cases are quoted, one from Luschka, two from Kussmaul, one from Tobege, and two from G. Braun. Although all the authors considered that the corpus luteum so described indicated the Graafian follicle from which the fertilized ovum had escaped, Prof. Mayrhofer contends that the aperture could not possibly have remained uncicatrized for so long a time as from five to twelve weeks, and that the corpora lutea seen in these cases were really quite recent ones, formed during pregnancy, and were only not recognized as such on account of preconceived opinions. He compares the description of their size and appearance with the almost identical account given by Benham of a corpus luteum found in a girl who had died during menstruation, which had all the anatomical characters of the true corpus luteum of pregnancy.

The author considers it by this means proved that corpora lutea are formed afresh from time to time during pregnancy, at any rate up to the end of the third month. There are no facts to demonstrate whether they continue to be formed every month during pregnancy, and have each of them a duration no longer than that of the corpus luteum of menstruation, or whether they are formed at longer and irregular intervals. Prof. Mayrhofer himself considers the former opinion more probable. A simple explanation is thus found for the fact that in women who had died during the course of pregnancy, or shortly after delivery, sometimes no corpus luteum at all is found. Of cases of this kind, which are not very rare, the author quotes one mentioned by Turner, and one by Otto. The accepted doctrine of the long duration of the true corpus

luteum has been founded upon the fact that during the second, third, and fourth month of pregnancy the corpus luteum is much larger than that found at a later period, and it has been naturally supposed that the smaller corpus luteum of the later months arose from the involution of the larger one of the early months. The facts, however, would be easily explained by supposing that the corpus luteum is renewed every month, or at irregular intervals, but that the stimulus to its development derived from the pregnancy is greater in the earlier than in the later months, or after delivery. The high degree of the development of the yellow cortical substance in the corpora lutea, which had not yet become cicatrized, does not prove anything as to their age, for it had been shown by Bischoff that in bitches at any rate a considerable development of the yellow substance takes place even before the rupture of the follicle.

A weighty objection may be raised to the author's doctrine on the ground that, in epidemics of puerperal fever, observers have looked for fresh corpora lutea in women who have died soon after delivery with a negative result. He answers this objection by saying that the day of delivery is generally rather more than 280 days from the commencement of the last menstrual period, and thus does not coincide with the tenth monthly epoch from that time, but falls a few days later. The tenth epoch may give the start to the process of labour, but it does not actually come on for a few days more. And a few days may so alter a corpus luteum that it could no longer be recognized as a fresh one. That sometimes, if not generally, an ovum is liberated near the time of delivery the author considers to be proved by a case which he relates, in which coitus, one week after delivery at full term, was followed by pregnancy.

The bearing of this doctrine upon cases which have been considered to show a migration of the ovum from one side to the other is obvious. The author derives a strong argument in its favour from the frequency of cases in which in tubal pregnancy, or pregnancy in one horn of an irregularly developed uterus, the corpus luteum has been found on the opposite side of the foetation. This frequency is such that, on the assumption that the corpus luteum indicates the place whence the fertilized ovum was derived, we should have to conclude that migration of the ovum across the peritoneal cavity occurs almost as frequently as not, a supposition which is *a priori* very improbable. Prof. Mayrhofer's conclusion is that the corpus luteum does not indicate the ovary which produced the fertilized ovum, and that there is no evidence of any migration of the ovum from one side to the other. That the spermatozoa, however, may migrate from one side to the other through the peritoneal cavity is proved by the authentic cases in which there has been a uterus unicornis, the undeveloped horn being represented by an impervious fibrous band, and in which foetation has nevertheless taken place in the ovary, Fallopian tube, or outer part of the uterine horn on the undeveloped side.—*Obstetrical Journal of Great Britain*, January, 1877, from *Wiener Med. Wochenschrift*, Nos. 18 and 19, 1876.

3. *On the Quantitative Estimation of Urea.*—In a notice of the simple process of Drs. RUSSELL and WEST, for estimating urea, of which an account was given in the number of this Journal for April, 1875, p. 531, it was stated that the hypobromous solution decomposes in hot weather more quickly than was expected, and that it is very important that it be quite freshly prepared.

Drs. Russell and West draw especial attention (*Practitioner*, Jan. 1877) to this, and suggest that the solution be prepared in the following manner: A solution of caustic soda is made in water in the proportion of 100 grammes of solid caustic soda to 250 cc. of water. This solution may be made in large quantities, for it will keep good for a very long time. To part of this solution bromine is added in the proportion of 25 cc. to every 250 cc. of caustic soda solution *at the time it is required for use*.